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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,281	11/25/2003	Takayuki Hattori	2927-0163P	4758
2292	7590	09/19/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			JACKSON, MONIQUE R	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 09/19/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/720,281

Applicant(s)

HATTORI ET AL.

Examiner

Monique R. Jackson

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/04</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, Species A, in the reply filed on 6/30/06 is acknowledged and though the Examiner does not find Applicant's arguments persuasive with respect to the office action issued September 2005, the Examiner has reconsidered and withdrawn the restriction requirement.

2. Claims 1-30 are pending in the application.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 112***

4. Claims 2, 16-17, 19-20, 22, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In these claims, specific equations are recited however it is still unclear what is meant to be encompassed by these equations given the wording of these claims, e.g. are these relationships required, are they met under certain conditions only, what does the term "establishes" mean in the claims?

5. Claims 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "low-nitrile" in claims 10-12 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Art Unit: 1773

6. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 10 recites the limitation "said second discontinuous" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 28 recites that the salt is blended or kneaded with a polymer composing "an discontinuous polymer phase" and the mixture is then blended with a polymer "composing a continuous polymer phase" and a polymer "composing another discontinuous polymer phase", however based on these limitations, it is unclear whether the initial blending of the salt is with a single polymer, and hence the polymer would not be a "discontinuous polymer phase" or with a mixture of polymers. Based on the original disclosure, it appears as if the Applicant means for the salt to be kneaded or blended uniformly with a polymer **that will form** a discontinuous polymer phase, not blended with a polymer that is already a discontinuous polymer phase as instantly claimed.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada (USPN 6,697,587, previously printed as US 2002/0022142A1.) Harada teaches a

Art Unit: 1773

semiconductive rubber composition, a charging member such as a roller or belt having an elastic layer formed from the rubber composition, and an electrophotographic apparatus comprising the charging member, wherein the semiconductive rubber composition has superior electrical properties and is formed by a dispersed domain structure having a polymeric continuous phase composed of an ion conductive rubber material and a polymeric dispersed phase composed of an electron conductive rubber material and conductive particles mixed therewith, wherein Harada teaches that the electrical resistance of the elastic layer of the charging roller is preferably  $1 \times 10^3$  to  $1 \times 10^9 \Omega \text{ cm}$  (Abstract; Col. 1, lines 7-65; Col. 12, lines 26-63.) Harada teaches that the electrical resistance of the composition can be easily set based on the composition of the two phases and the ratio of the two compositions wherein a polymer having a higher composition ratio tends to form the continuous phase (Col. 1, lines 8-10; Col. 4, lines 24-43; Col. 5, lines 1-14; Col. 9, lines 12-21.) Harada teaches that the continuous phase comprises an ion conductive agent added to a raw rubber A that may be a polyether rubber such as epichlorohydrine-ethyleneoxide-allylglycidylether, NBR, hydrogenated NBR, an acrylic rubber, others as recited in Col. 5, lines 27-40, and the like and combinations thereof (Col. 4, line 15-Col. 5, lines 40.) The ion conductive agent may be added to the raw rubber A in some cases so that no bleedout of the agent occurs, with example ion conductive agents including salts that read upon the instantly claimed salts comprising fluoro- and sulfonyl- groups such as lithium trifluoromethane sulfonate; and may be provided in an amount of 0.5 to 5 parts by weight with respect to 100 parts by weight of the raw rubber A (Col. 5, lines 42-61.) Harada also teaches that the raw rubber B may be EPM or EPDM with conductive particles preferentially blended therewith such that the conductive particles have a higher affinity to the raw rubber B (Col. 6, line 10-Col. 7, line 14;

Art Unit: 1773

Col. 8, line 6-25.) Harada teaches that the composition can be producing by blending the conductive agents with the rubber component and then blending or kneading the master batch thus formed with the raw rubber A composition, wherein the resulting roller layer can be made via an extruder and then vulcanized in an oven (Col. 8, lines 30-48; Col. 9, lines 23-58; Col. 10, lines 27-41.) Harada teaches that the blending ratio of raw rubber A/raw rubber B, on a weight basis, is preferably in the range of from 95/5 to 40/60 (Col. 9, lines 34-38.) Harada further teaches that the composition may include a plasticizer in order to produce an elastic layer with preferably low hardness, or may include other compounding agents generally used for rubbers such as fillers, crosslinking agents, foaming agents (Col. 9, line 53-Col. 10, line 21.) Hence, Harada generally teaches the components of the instantly claimed invention with the exception that the salt taught by Harada is present in the continuous phase rather than the discontinuous phase as instantly claimed. However, based on the teachings of Harada, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the ratio of the two polymer components to determine which was the dispersed phase versus the continuous phase, as taught by Harada, based on the desired volume resistivity for a particular end use, and though Harada does not specifically teach the instantly claimed percentages, one skilled in the art would have been motivated to utilize routine experimentation to determine the optimum amounts of the materials taught by Harada to provide the desired electrical properties. Further, one having ordinary skill in the art at the time of the invention would have been motivated to utilize any of the polymers taught by Harada, alone or as mixtures as taught by Harada, and in any combination of dispersed and continuous phases given the reasonable expectation of success, wherein considering Harada teaches that the composition may be utilized for the same type of

Art Unit: 1773

applications as instantly claimed, it would have been obvious to one having ordinary skill in the art to utilize routine experimentation to provide charging members with similar characteristics as those claimed and known as suitable in the art. Lastly, though Harada teaches that the composition may include compounding agents generally used for rubbers, Harada does not specifically teach the use of flame retardants as instantly claimed however flame retardants are an obvious species of additive utilized in the art to provide desired flame retardant properties and would have been obvious at the time of filing.


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wessling (USPN 4,929,388) teaches an electrically semiconducting thermoplastic polymer blend comprising a continuous polymer phase containing electrically conductive substances, and a discontinuous polymer phase. Takagi et al (USPN 5,878,313) teach a developing apparatus wherein an elastic layer of a roller comprises a base resin such as EPDM or other elastomers, and a conductive agent wherein the conductive agent may be conductive powders such as carbon black or ionic conductive substrates such as salts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monique R. Jackson  
Primary Examiner  
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September 17, 2006